

WHAT IS CLAIMED IS:

1. A formulation for a pharmacologically inert coating to serve as a temporary mechanical barrier on top of a temporary coating of a pharmacologically-active substance applied to a surface of a tooth, the formulation comprising:

5 an aqueous dispersion of a polymethylmethacrylate; and
a plasticizer.

2. The formulation of claim 1 wherein the polymethylmethacrylate is an ammonio methacrylate copolymer, type B USP/NF.

3. The formulation of claim 2 wherein the ammonio methacrylate
10 copolymer is EUDRAGIT RS 30 D brand polymethylmethacrylate.

4. The formulation of claim 1 wherein the plasticizer is a pharmaceutical grade plasticizer selected from the group consisting of triethyl citrate, dibutyl sebacate, dibutyl phthalate, and diethyl phthalate.

5. The formulation of claim 4 wherein the plasticizer is triethyl citrate.

15 6. The formulation of claim 4 comprising between 1% and 20% w/w plasticizer.

7. The formulation of claim 6 having a viscosity of between 5 cP and 30 cP and a specific gravity of 1.054 g/ml plus or minus 0.050 g/ml.

8. The formulation of claim 7 wherein the viscosity is between 5 cP and 20
20 cP.

9. A formulation comprising (w/w):
20% to 35% ammonio methacrylate copolymer type B USP/NF;
1% to 10% triethyl citrate; and
60% to 70% water.

10 10. The formulation of claim 9 wherein the ammonio methacrylate copolymer is EUDRAGIT RS 30 D brand polymethylmethacrylate.

11. A formulation comprising (w/w) of:
28% EUDRAGIT RS 30 D polymethylmethacrylate;
6% triethyl citrate; and
30 66% water.

12. A method for protecting pharmacologically-active substances applied in a temporary coating to a surface of a tooth comprising:

5 applying a pharmacologically inert barrier coating of a polymethylmethacrylate and a plasticizer on top of the temporary coating containing the pharmacologically-active substance to serve as a temporary mechanical barrier against the washings of saliva and abrasion caused by eating food.

13. The method of claim 12 wherein the pharmacologically-active substance(s) comprise one or more active agents of the type known to reduce caries when applied to the tooth.

10 14. The method of claim 13 wherein the pharmacologically-active substances are selected from the group consisting of chlorhexidine and fluoride.

15 15. The method of claim 12 wherein the polymethylmethacrylate is water-dispersed and the plasticizer is a pharmaceutical grade plasticizer selected from the group consisting of triethyl citrate, dibutyl sebacate, dibutyl phthalate, and diethyl phthalate.

16. The method of claim 12 wherein the polymethylmethacrylate is an ammonio methacrylate copolymer, type B USP/NF.

17. The method of claim 16 wherein the ammonio methacrylate copolymer is EUDRAGIT RS 30 D brand polymethylmethacrylate.

20 18. A method of preventing or reducing the incidence of caries in teeth, comprising the steps of:

- a. applying a liquid coating of pharmacologically-active substances of the type used to reduce caries to a tooth surface; and
- 25 b. applying a pharmacologically inert barrier coating of a polymethylmethacrylate and a plasticizer on top of the coating containing the pharmacologically-active substance to serve as a temporary mechanical barrier against the washings of saliva and the abrasion from eating foods.